

BRIEF FOR APPELLEE  
DIRECTOR OF UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

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2006-1400  
(Serial No. 09/911,532)

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IN RE JOHN A. WHEATLEY and WALTER J. SCHRENK

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Appeal from the United States Patent and Trademark Office,  
Board of Patent Appeals and Interferences.

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September 5, 2006

Representative Claim

Claim 30:

A multilayer interference film comprising

alternating layers of at least a first and second diverse polymeric material,

the alternating layers having a refractive index mismatch in at least a first plane perpendicular to the film and having layer thicknesses suitable to reflect light over a range of wavelengths,

wherein one of the first and second diverse polymeric materials comprises a polymer selected from the group consisting of polyethylene naphthalate [PEN] and a copolymer of ethylene naphthalate.

A156 (emphasis added).

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RULE 47.5 STATEMENT OF RELATED CASES

- (a) No other appeal from the Board of Patent Appeals and Interferences in connection with the patent application on appeal has previously been before this or any other court.
- (b) There is no known related case pending in this or any other court.

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DIRECTOR OF UNITED STATES PATENT AND TRADEMARK OFFICE

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Appeal from the United States Patent and Trademark Office,  
Board of Patent Appeals and Interferences.

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**STATEMENT OF THE ISSUE**

This appeal involves a straightforward obviousness rejection of one representative claim. Claim 30, broadly written, covers a multilayer (two or more) interference film with alternating layers where one of the first two layers is either (i) polyethylene naphthalate ("PEN") or (ii) a copolymer of ethylene naphthalate. The issue on appeal is whether substantial evidence supports the Board of Patent Appeals and Interferences' obviousness rejection given that multilayer/alternating interference films using polyethylene teraphthalate ("PET") were known (Rogers) as was the preference for using PEN over PET (either of the Utsumi references).

## **STATEMENT OF THE CASE**

Appellant (“Wheatley”) applied for claims on a multilayer light-polarizer. A156.<sup>1</sup> The examiner rejected claims 30 and 32-35 for obviousness, based on Rogers and either one of the two Utsumi references. A2. The Board affirmed both grounds of rejection. A1. Wheatley then appealed to this Court.

## **STATEMENT OF FACTS**

### **A. Claimed Invention**

Wheatley’s claims are directed to multilayer polymer films used to reflect and/or transmit certain wavelengths of light. A27, last ¶. Differing polymer materials are layered to enable certain wavelengths of light to pass through while reflecting other wavelengths of light. A29. What makes the invention work is a differing set of polymers in the alternating layers. A30. Generically, Wheatley’s invention can be referred to as a “polarizer.” A21. Although Wheatley’s application does not recite a particular use per se, it is well-known that polarizers are used on many optical instruments and in photography.

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<sup>1</sup> References to Wheatley’s brief are made by “Br. at \_\_\_\_” and to the Joint Appendix by “A \_\_\_\_.”

Representative claim 30 reads:

A multilayer interference film comprising

alternating layers of at least a first and second diverse polymeric material,

the alternating layers having a refractive index mismatch in at least a first plane perpendicular to the film and having layer thicknesses suitable to reflect light over a range of wavelengths,

wherein one of the first and second diverse polymeric materials comprises a polymer selected from the group consisting of polyethylene naphthalate [PEN] and a copolymer of ethylene naphthalate.

A156 (emphasis added).

Thus, claim 30 requires a multilayer film having: (i) alternating polymer-layers; (ii) layers with different refractive indices; (iii) layers with different thicknesses to reflect (as opposed to transmit) light; and (iv) one of the first two polymer-layers is either PEN or an ethylene naphthalate copolymer. A156.

For purposes of this appeal, elements (i)-(iii) are not disputed. Rather, the issue essentially is given multilayer films where one of the first materials was PET, would it have been obvious to a skilled polarizer-scientist to substitute PEN for PET.

Representative claim 30 reads:

A multilayer interference film comprising

alternating layers of at least a first and second diverse polymeric material,

the alternating layers having a refractive index mismatch in at least a first plane perpendicular to the film and having layer thicknesses suitable to reflect light over a range of wavelengths,

wherein one of the first and second diverse polymeric materials comprises a polymer selected from the group consisting of polyethylene naphthalate [PEN] and a copolymer of ethylene naphthalate.

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Thus, claim 30 requires a multilayer film having: (i) alternating polymer-layers; (ii) layers with different refractive indices; (iii) layers with different thicknesses to reflect (as opposed to transmit) light; and (iv) one of the first two polymer-layers is either PEN or an ethylene naphthalate copolymer. A156.

For purposes of this appeal, elements (i)-(iii) are not disputed. Rather, the issue essentially is given multilayer films where one of the first materials was PET, would it have been obvious to a skilled polarizer-scientist to substitute PEN for PET.

PATENTED OCT 5 1971

3,610,729

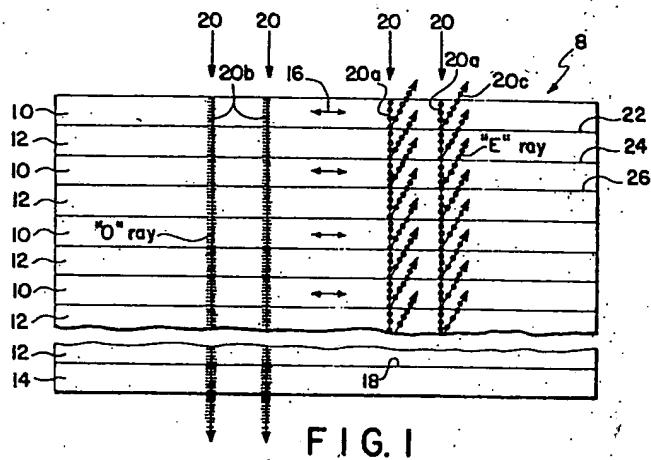


FIG. 1

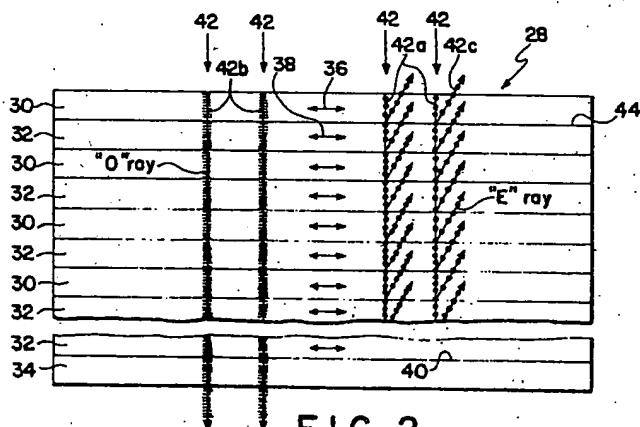


FIG. 2

INVENTOR.  
HOWARD G. ROGERS

BY  
*Brown and Mikulka*  
and  
*Frederick H. Brustman*  
ATTORNEYS

A0184

## B. Prior Art<sup>2</sup>

### 1. Rogers' Multilayer Alternating Films

Rogers is directed to a "multilayered light polarizer" issued to the Polaroid Corp. A183. A "polarizer" separates light "into two oppositely polarized components, one of which is transmitted and another component which is reflected." A183, col. 2, Abstract; see also A185, col. 1, lines 10-12, 58-61. Rogers accomplishes polarizing or separating portions of light by having multiple layers of different polymers, i.e., by being "multilayered." A185, col. 1, lines 25-26.

Referring to Figures 1 and 2 (A184, opposite), Rogers discloses Polarizers 8 and 28 as preferred embodiments. A185, col. 2, line 21; A186, col. 4, line 28. Each polarizer has two different types of polymer-layers, which alternate back and forth (i.e., layer 10, then 12, then 10 . . . ; layer 30, then 32, then 30 . . . ; respectively). A185, col. 2, lines 21-23; A186, col. 4, lines 27-34. This alternating sequence is supported by substrates 14 and 34, respectively. A185, col. 2, lines 21-23; A186, col. 4, lines 28-29.

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<sup>2</sup> The references relied on for obviousness are: (1) U.S. Patent 3,610,729, issued to Howard Rogers ("Rogers") (A183-88); (2) U.S. Patent 4,756,953, issued to Shigeo Utsumi ("Utsumi '953") (A189-97); and (3) U.S. Patent 4,799,772, issued to Shigeo Utsumi ("Utsumi '772") (A198-202).

## B. Prior Art<sup>2</sup>

### 1. Rogers' Multilayer Alternating Films

Rogers is directed to a "multilayered light polarizer" issued to the Polaroid Corp. A183. A "polarizer" separates light "into two oppositely polarized components, one of which is transmitted and another component which is reflected." A183, col. 2, Abstract; see also A185, col. 1, lines 10-12, 58-61. Rogers accomplishes polarizing or separating portions of light by having multiple layers of different polymers, i.e., by being "multilayered." A185, col. 1, lines 25-26.

Referring to Figures 1 and 2 (A184, opposite), Rogers discloses Polarizers 8 and 28 as preferred embodiments. A185, col. 2, line 21; A186, col. 4, line 28. Each polarizer has two different types of polymer-layers, which alternate back and forth (i.e., layer 10, then 12, then 10 . . . ; layer 30, then 32, then 30 . . . ; respectively). A185, col. 2, lines 21-23; A186, col. 4, lines 27-34. This alternating sequence is supported by substrates 14 and 34, respectively. A185, col. 2, lines 21-23; A186, col. 4, lines 28-29.

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PATENTED OCT 5 1971

3,610,729

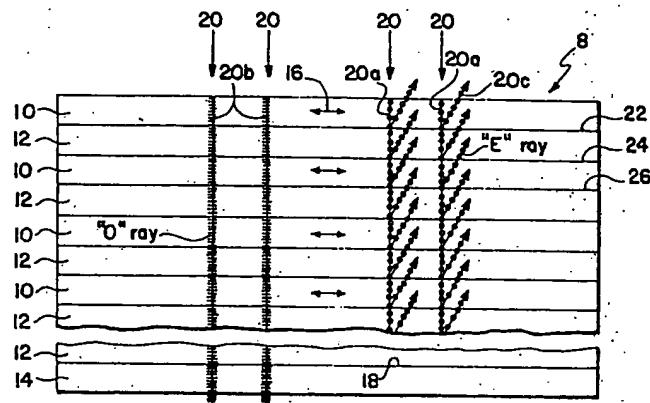


FIG. 1

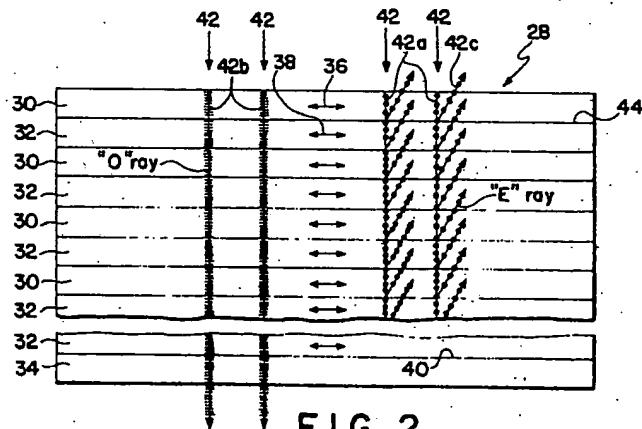


FIG. 2

INVENTOR  
HOWARD G. ROGERS

BY  
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and  
Frederick H. Brustman  
ATTORNEYS

A0184

Top layers 10 and 30 are made of "polymer materials [such] as polystyrene, polymethyl-methacrylate, polysulfone, poly (para-xylylene) and polyethylene-teraphthalate [i.e., PET]." A185, col. 2, lines 50-57 (emphasis added); A186, col. 4, lines 73-75 (emphasis added). Attaching layers 12 and 32 may be made of "fluorinated polymers, magnesium fluoride and cellulose acetate butyrate." A185, col. 2, lines 66-72.

Rogers' layer 10 "should be selected to have as great a difference between the two indices of refraction as possible since the number of layers in the polarizer can be substantially decreased when using birefringent materials having a greater difference between their indices of refraction." A185, col. 2, lines 60-65. The layer-thicknesses are critical to the goal to "reflect a substantial portion of polarized light." A185, col. 1, lines 10-12, col. 2, lines 29-30; A186, col. 3, lines 47-50.

Both polarizers show incident light being partly transmitted and partly reflected. Light rays 20 and 42 enter the polarizers. A186, col. 3, lines 17-24; A186, col. 4, lines 34-53. Light-portions 20b and 42b transmit through the layers/polarizer, whereas 20a, 20c, 42a and 42c reflect back off of the layers/polarizer.

A184; A185, col. 2, lines 11-18; A186, col. 3, lines 23-40; A186, col. 4, lines 34-52.

**2. Utsumi References: Substituting/Preference For PEN Over PET**

**a. Utsumi '953**

Utsumi '953 is directed to "PEN film" for polarizing plates. A189, col. 1; A190, col. 1, lines 1-11. Starting with the Background of the Invention Section, the reference explains the problems associated with using PET films, i.e., that a uniaxially stretched PET film has been found to have "defects," including tearing, poor weather resistance, and unsuitability for the outdoors. A190, col. 1, lines 21-32.

Utsumi '953 expressly addresses solving these problems by using PEN instead of PET stating: "In place of such [PET] films, [PEN] films have been proposed." A190, col. 1, lines 33-34. Utsumi '953 further teaches how PEN is "superior" to PET in several respects. A190, col. 1, lines 59-64. The patent discloses "polyethylene napthalate [PEN] film . . . has a much higher heat resistance than a polyethylene terephthalate [PET] film, produces no adhesion of a low-molecular weight substance such as oligomer, [and] is efficient in weather resistance, tear strength and degree of polarization." A193, col. 8, line 64 - A194,

col. 9, line 3. The patent also discloses that by substituting PEN for PET, the resulting film is “superior in weather resistance, tear strength and heat resistance.” A190, col. 1, lines 59-62.

Further, the written description contains experimental data (entitled “COMPARATIVE EXAMPLE”) documenting the advantages of PEN over PET in a polarizing plate. A194, col. 10, line 36 - A195, col. 11, line 4. Specifically, the data shows that films with PEN experienced less heat shrinkage and had a higher degree of polarization as a polarizing plate than PET. Based upon that data, Utsumi ‘953 concludes that “a [PEN] film is much superior in the balance between the mechanical properties and the degree of polarization to a [PET] film.” A195, col. 11, lines 1-4.

Finally, claims 1 to 13 in Utsumi ‘953 each recites a PEN film. A195-97.

**b. Utsumi ‘772**

Utsumi ‘772 also discloses PEN films and their advantages over PET, but for a different application. Like Utsumi ‘953, Utsumi ‘772 (i) identifies the problems associated with PET films, such as low heat resistance and bleeding an oligomer when exposed to high temperature (A199, col. 1, lines 26-40); and

(ii) states as a solution “[i]n place of [PET] films, [PEN] films have been proposed” (A199, col. 1, lines 45-46).

Similarly, the reference explains how PEN is better than PET in weather resistance, tear strength, and heat resistance. A199, col. 2, lines 4-9; A200, col. 4, lines 22-28. Utsumi ‘772 also presents a table of data, again entitled “COMPARATIVE EXAMPLE,” showing the superiority of a PET film over a PEN film in a liquid crystal panel. A202, col. 7, line 35 - A202, col. 8, line 12. The data reveals that PEN film has a better heat shrinkage ratio, offers better mechanical properties, and does not bleed an oligomer. Id. The written description concludes “using a [PEN] film . . . is much superior to a [PET] film” (A202, col. 8, lines 13-20), and claims 1 to 7 each recites a PEN film (A202).

### C. Examiner’s Findings

The examiner found all of the limitations of claim 30 are present in Rogers, except for the use of PEN instead of PET. A141; A162. Specifically, the examiner found that Rogers discloses a multilayer film having (i) alternating polymer-layers, (ii) different refractive indexes, and (iii) layer-thicknesses to reflect (not transmit) light. A141; A162. According to the examiner, all that

Rogers is missing is that one of the polymer-layers is PEN or an ethylene napthalate copolymer. A141; A162.

But the examiner found that either Utsumi '953 or Utsumi '772 supplies the missing teaching with explicit motivation to substitute PEN for PET. A139-40; A162-64. Specifically, the examiner relied on the teachings in the Utsumi references showing how PEN is superior to PET in: (i) heat resistance; (ii) heat shrinkage ratio; (iii) mechanical properties; and (iv) degree of polarization. A139; A162. The examiner cited to, and discussed, the above-beneficial teachings set forth in the Utsumi references. A139-41; A163-64.

After showing the *prima facie* case in alternative ways, the examiner found that Wheatley presented no evidence of nonobviousness, but instead merely attempted to attack the references individually. A139-40; A165-66. In response to Wheatley's argument that improper hindsight was employed, the examiner reiterated that the Utsumi references expressly taught the advantages of using PEN over PET. A140; A166.

#### **D. Board Decision**

The Board agreed with all of the examiner's findings, including that Rogers discloses all the limitations of claim 30 except the use of PEN (*i.e.*, Rogers discloses PET). A6-7. Like the examiner, the Board found that Utsumi '953 and Utsumi '772 each independently have several motivational reasons why a person skilled in light-polarizer art would substitute PEN for PET. A6-7. In particular, the Board stated:

skilled artisans would have been motivated to use PEN in the multilayer film of Rogers to replace the PET to improve heat resistance, heat shrinkage ratio, mechanical properties and the degree of polarization . . . . See Utsumi '953 at columns 1 and 7-11; and Utsumi '772 at columns 2, 3, 4, and 8.

A6-7.

The Board addressed Wheatley's argument that PET is applied through a coextrusion process and that coextruding PEN would not be obvious, finding, *inter alia*, that claim 30 has "no express limitations which would require a coextrusion process." A6. See also A7 ("we find no express support for these arguments in the language of independent claim 30"). The Board therefore affirmed the examiner's decision that claim 30 would have been obvious. A7-8.

## **SUMMARY OF ARGUMENT**

Representative claim 30 broadly covers a multilayer film for filtering light where one of the first two layers is PEN. Rogers discloses every element of claim 30 except it uses PET instead of PEN. Wheatley does not dispute this point. And each of the Utsumi references discloses the use of PEN for polarizing, and more importantly, the advantages of using PEN instead of PET.

Wheatley's attempt to attack the references individually fails since this is an obviousness rejection. Finally, Wheatley's argument concerning the references having a reasonable expectation of success is untimely since it was never made to the Board. Consistent with failing to raise the argument is the fact that Wheatley submitted no supporting or countering evidence.

## **ARGUMENT**

### **A. Standard of Review**

Wheatley bears the burden of demonstrating reversible error by the Board with respect to either a legal conclusion (reviewed de novo) or a factual finding (reviewed for substantial evidence). In re Gartsdie, 203 F.3d 1305, 1315-16 (Fed. Cir. 2000). While the ultimate conclusion of obviousness is a legal question, the motivation to combine references is a factual inquiry. Id. at 1316. Whether an

appellant preserved an argument to the Board “is a question of law based on subsidiary factual findings.” Cooper v. Goldfarb, 154 F.3d 1321, 1331 (Fed. Cir. 1998).

This Court upholds Board factual findings supported by substantial evidence. 5 U.S.C. § 706(2)(E); Gartside, 203 F.3d at 1315. Substantial evidence “is something less than the weight of the evidence but more than a mere scintilla of evidence,” In re Kotzab, 217 F.3d 1365, 1369 (Fed. Cir. 2000), and “means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion,” Consol. Edison Co. v. Nat'l Labor Relations Bd., 305 U.S. 197, 229 (1938). “[T]he possibility of drawing two inconsistent conclusions from the evidence does not prevent an administrative agency’s finding from being supported by substantial evidence.” Consolo v. Fed. Maritime Comm’n, 383 U.S. 607, 620 (1966). “If the evidence in record will support several reasonable but contradictory conclusions,” this Court “will not find the Board’s decision unsupported by substantial evidence simply because the Board chose one conclusion over another plausible alternative.” In re Jolley, 308 F.3d 1317, 1320 (Fed. Cir. 2002).

**B. The Board Correctly Found That Claim 30 Would Have Been Obvious In View Of Rogers Combined With Either Of The Utsumi References**

**1. Rogers Discloses All The Limitations Of Claim 30, Except For The Use Of PEN**

Claim 30 recites a multilayer film having:

- (1) alternating polymer-layers;
- (2) different refractive indices;
- (3) layer thicknesses used to reflect light; and
- (4) one polymer-layer is PEN or an ethylene naphthalate copolymer.

A156.

Rogers discloses above limitations (1)-(3), i.e., all of claim 30 except for the use of PEN, which has not been contested by Wheatley. See Br. at 15-30.

Specifically, Rogers states that layers 10 and 30 of preferred polarizers 8 and 28 are made of “polymer materials [such] as polystyrene, polymethyl-methacrylate, polysulfone, poly (para-xylylene) and polyethylene-teraphthalate [i.e., PET].”

A185, col. 2, lines 50-56, A186, col. 4, lines 73-75.

As to above limitation (2), Rogers discloses that layer 10 in preferred polarizer 8 “should be selected to have as great a difference between the two indices of refraction [from layer 12] as possible since the number of layers in the

polarizer can be substantially decreased when using birefringent materials having a greater difference between their indices of refraction.” A185, col. 2, lines 60-65.

Regarding above limitation (3), Rogers teaches that layer-thickness is critical to the goal of “reflect[ing] a substantial portion of polarized light.” A185, col. 1, lines 10-12, col. 2, lines 29-30. Indeed, for polarizers 8 and 28, Figures 1 and 2 show that light rays 20 and 42 enter the polarizers. A186, col. 3, lines 17-24; A186, col. 4, lines 34-53. Light-portions 20b and 42b transmit through the layers/polarizer, whereas 20a, 20c, 42a and 42c reflect back off of the layers/polarizer. A184; A186, col. 3, lines 23-40; A186, col. 4, lines 34-52.

**2. Both Utsumi Patents Disclose Using PEN Film And The Advantages For Using It Instead Of PET**

Utsumi ‘953 is directed to PEN film for use in polarizing plates. A189, col. 1; A190, col. 1, lines 1-11, 33-34. Utsumi ‘953 discloses the drawbacks of using PET, and the advantages of using PEN instead. A193, col. 8, line 64 - A194, col. 9, line 3. Also, claims 1 to 13 in Utsumi ‘953 each recites a PEN film. A195-97.

Utsumi ‘772 discloses using PEN film for a slightly different application. A198-99. Like Utsumi ‘953, Utsumi ‘772 also recognizes the problems associated

with PET film and the advantages associated with using PEN film. A200, col. 4, lines 22-28. Further claims 1 to 7 in Utsumi '772 each recites a PEN film. A202.

**3. A Skilled Polarizer-Scientist Would Have Been Motivated To Use PEN Instead Of PET, As Taught By The Utsumi References**

It is well-settled that motivation for obviousness under 35 U.S.C. § 103 may come from the prior art. In re Rouffet, 149 F.3d 1350, 1355-56 (Fed. Cir. 1998). Here, it comes from either Utsumi reference.

**a. Utsumi '953**

First, Utsumi '953 teaches that PET film has "defects" resulting in tearing, poor weather resistance, and unsuitability for the outdoors. A190, col. 1, lines 21-32. To solve this problem, Utsumi '953 explains that "polyethylene naphthalate [PEN] film . . . has a much higher heat resistance than a polyethylene terephthalate [PET] film, produces no adhesion of a low-molecular weight substance such as oligomer, is efficient in weather resistance, tear strength and degree of polarization." A193, col. 8, line 64 - A194, col. 9, line 3.

Moreover, Utsumi '953 includes comparative experimental data showing how PEN is superior to PET when used on polarizing plates. A194, col. 10, line 36 - A195, col. 11, line 4. The reference then concludes, based on the experimental data, that "a [PEN] film is much superior in the balance between

the mechanical properties and the degree of polarization to a [PET] film.” A195, col. 11, lines 1-4.

**b. Utsumi ‘772**

Utsumi ‘772 similarly identifies problems with PET, such as low heat resistance and bleeding an oligomer when exposed to high temperature. A199, col. 1, lines 26-40. Utsumi ‘772 states “[i]n place of [PET] films, [PEN] films have been proposed.” A199, col. 1, lines 45-46. It likewise teaches that PEN “is superior in weather resistance, tear strength and heat resistance to a stretched [PET] film.” A199, col. 2, lines 4-9.

Utsumi ‘772 likewise includes comparative data showing that PEN is superior to PET when used in crystal panel substrates (A202, col. 7, line 35 - A202, col. 8, line 12), and concludes “using a [PEN] film . . . is much superior to a [PET] film” (A202, col. 8, lines 13-20).

**c. Combining Rogers And Either Utsumi Reference**

Rogers teaches each and every limitation of the claimed multilayer film, except for the use of PEN instead of PET. Both Utsumi patents identify various defects associated with PET films and teach substituting PEN for PET to overcome those defects. The Utsumi patents likewise disclose comparative test

data showing that PEN film is superior to PET film in weather resistance, tear strength, heat resistance, mechanical properties, and degree of polarization when used on polarizing plates and crystal panel substrates. Certainly, a person of ordinary skill in the light-polarizer art, aware that PEN is superior to PET in polarizing light based on the two Utsumi patents, would have been motivated to substitute the use of PET as taught in Rogers for the use of PEN to attain the many advantages offered by PEN. Indeed, in the words of the Board: “Skilled artisans would have been motivated to replace PET with PEN in the multilayer film of Rogers to improve heat resistance, heat shrinkage ratio, mechanical properties, and the degree of polarization.” A6-7.

Contrary to Wheatley’s argument (Br. at 13-14), there is a significant amount of motivational evidence – repeated many times throughout the references themselves – for replacing PEN for PET. That evidence is surely substantial under the “reasonable mind” test of Consolidated Edison and Gartside and supports the Board’s motivation finding concerning PEN. See In re Berg, 320 F.3d 1310, 1315 (Fed. Cir. 2003) (“As persons of scientific competence in the fields in which they work, examiners and administrative patent judges on the Board are responsible for making findings, informed by their scientific knowledge, as to the meaning of

prior art references to persons of ordinary skill in the art and the motivation those references would provide to such persons"); In re Sovish, 769 F.2d 738, 742-43 (Fed. Cir. 1985) (when combining prior art teachings for obviousness skill is presumed, not something less).

**d. The Board Clearly Identified And Cited To The Evidence It Used To Show Motivation**

Wheatley argues that the Board set forth conclusory citations to the Utsumi references, thereby not meeting its burden to show obviousness. Br. at 15. Wheatley's argument is not persuasive. In addition to expressly citing to Utsumi '953, columns 1 and 7-11, and Utsumi '772, columns 2-4 and 8 for their respective discussions showing the benefits of using PEN over PET, the Board meaningfully relied on, and further discussed, the examiner's findings. A7. Specifically, the examiner made explicit findings on the teachings in the two Utsumi references concerning how PEN improves heat resistance, the heat shrinkage ratio, mechanical properties, and the degree of polarization. A162. The examiner likewise cited to, and discussed, the above-detailed many beneficial teachings set forth in the Utsumi references. A163-64.

Thus, Wheatley's form-over-substance criticism of how the Board wrote its opinion simply does not overcome the *volume* of evidence supporting the Board's

motivation finding (substitute PEN for PET), expressly discussed throughout the Board's opinion. See, e.g., In re Smith, 714 F.2d 1127, 1137 n.13 (Fed. Cir. 1983) ("we review the decision of the board and not its opinion").

### **C. Wheatley's Other Arguments Are Not Persuasive**

#### **1. Wheatley's Attack On The References Individually Is Flawed Since This Is An Obviousness Rejection Not Anticipation**

Wheatley argues, with no evidentiary support, that the differences in film type between Rogers (multilayer film) and the Utsumi patents (single layer) means no one would ever substitute PEN for PET in a multilayer film. Br. at 15-16. However, the various discussions in the two Utsumi patents expressly showing the advantages of PEN over PET do not limit these advantages to only single layer films. That PEN outperforms PET as a light-polarizing polymer, as demonstrated by actual comparative data recited in the Utsumi patents, is the key teaching. Because of its inherent chemical properties, PEN will polarize light better than PET whether used as a single layer on a transparent substrate or used in alternating layers in a multilayer film. Put differently, the number of layers in the ultimate film does not affect PEN's light-polarizing ability. Thus, the teachings in the two Utsumi patents regarding the superiority of PEN over PET is not limited to single layer film but instead applies to light polarization technology in general.

Nor can Wheatley's argument that the different applications disclosed in the Utsumi patents where PEN film is used (*i.e.*, as a polarizing plate and for use in liquid crystal panel substrates) subvert any suggestion to combine. Br. at 15. A person of ordinary skill in light-polarizing art would not focus on the particular uses of the PEN films disclosed in the Utsumi patents. Instead, based upon the language found in the Background of the Invention sections of the Utsumi patents about the disadvantages of using PET, a skilled polarizer-scientist would recognize that those disadvantages would exist regardless of the particular use. Indeed, both Utsumi '953 and Utsumi '772 disclose without limitation to application that PET films are defective: "A uniaxially stretched [PET] film, however, has been found to have various defects as [the film] has increasingly been used for wide purposes, and an improvement has been demanded." A190, col. 1, lines 21-24; A199, col. 1, lines 21-25.

Further, the Background section refers to other prior art polymer references (Japanese Patent Laying Open No. 50-45877, Japanese Patent Publication No. 56-19012, and Japanese Patent Publication No. 48-29541) that disclose using PEN instead of PET. A190, col. 1, lines 35-55; A199, col. 1, lines 47-68. Those filings were not directed to either polarizing plates or liquid crystal panel substrates, but

instead magnetic recording tape. Id. Thus, that PEN was used in place of PET for magnetic recording tape implies that PEN may generally be used in place of PET regardless of application.

Moreover, it is well-established that “one cannot show non-obviousness by attacking references individually where, as here, the rejections are based on combinations of references.” In re Keller, 642 F.2d 413, 426 (CCPA 1981). In sum, contrary to Wheatley’s argument concerning alleged flaws in the Utsumi references, “[i]t is well settled that a prior art reference is relevant for all that it teaches to those of ordinary skill in the art.” In re Fritch, 972 F.2d 1260, 1264 (Fed. Cir. 1992). Accord In re Young, 927 F.2d 588, 591 (Fed. Cir. 1991) (“Patents are . . . relevant for all they contain”).

**2. Wheatley’s Reliance on In Re Fine To Show That The Board Improperly Employed Hindsight To Combine Rogers And The Utsumi Patents Is Misplaced**

Wheatley’s argument that the Board used impermissible hindsight, citing In re Fine, 837 F.2d 1071 (Fed. Cir. 1988), is not persuasive. Br. at 19-20. In Fine, the examiner rejected claims protecting a system for detecting and measuring minute quantities of nitrogen compounds as obvious in view of two references, and the Board affirmed. 837 F.2d at 1072-73. One of those references

disclosed a detector for measuring the amount of nitric oxide in a gas mixture, and the other reference disclosed a method for measuring sulfur compounds. Id. at 1074. This Court reversed, reasoning that the two references disclosed that one skilled in the art might find it obvious to try to make the claimed invention, but that the references did not suggest substituting the nitric oxide detector of the first reference for the sulfur oxide detector in the system taught by the second reference. Id. More specifically, the Court observed that (1) the first reference expressly taught away from using nitrogen, and (2) the second reference contemplated measuring the total amount of nitric oxide in a *mixture*, whereas the claimed invention measured the *components* of the nitric oxide gas flow. Id. at 1075.

Unlike the references in Fine, Rogers did not expressly or even implicitly teach away from using PEN. Thus, when a person of skill in light-polarizing art considered Rogers, he would not have been discouraged from applying the teachings from Utsumi about the superiority of PEN over PET to substitute PEN for PET in Rogers. Moreover, Wheatley has pointed to no evidence of teaching away, i.e., that substituting PEN for PET would be divergent from, or counterproductive to, Rogers' multilayer polymer film. Cf. In re Gurley, 27 F.3d

551, 553 (Fed. Cir. 1994) (“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant”). Thus, the Board did not employ hindsight or otherwise err in affirming the examiner’s obviousness rejection.

Wheatley’s argument also sounds like one asserting that the references cannot be physically combined with each other and, therefore, his invention would not have been obvious. However, it has long been clear that “it is not necessary that the inventions of the references be physically combinable to render obvious the invention under review.” In re Sneed, 710 F.2d 1544, 1550 (Fed. Cir. 1983). Accord In re Etter, 756 F.2d 852, 859 (Fed. Cir. 1985) (*in banc*) (affirming obviousness determination despite physical non-combinability argument, holding that such assertions “are basically irrelevant, the criterion being not whether the references could be physically combined but whether the claimed inventions are rendered obvious by the teachings of the prior art as a whole”).

### **3. The Problem Allegedly Solved By Claim 30 Does Not Negate The Strong Evidence Of Motivation In This Case**

Contrary to Wheatley’s argument concerning problems in the art (Br. at 21-25), the suggestion to combine Rogers with the Utsumi patents is not

negated by the fact that Rogers and the Utsumi patents cover, and extend to, different problems. It is well-settled that a secondary reference need not show the inventor's precise problem to support an obviousness determination.

See In re Dillon, 919 F.2d 688, 693 (Fed. Cir. 1990) (*in banc*); Fritch, 972 F.2d at 1264; In re Lemelson, 397 F.2d 1006, 1009 (CCPA 1968) (patents "are part of the literature of the art, relevant for all they contain"). If that were the case, then commonly the rejection would be for anticipation rather than for obviousness.

As this Court recently held, "the problem examined is not the specific problem solved by the invention but the general problem that confronted the inventor before the invention was made." In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006). Here, the general problem facing Wheatley was light polarization through the use of polymers. In solving that problem, the Utsumi patents offered pertinent teachings about which polymers achieved light polarization better than others. Indeed, the Utsumi patents teach that PEN polarizes light to a higher degree than PET (the polymer disclosed in Rogers as a light polarizer), *supra*. Hence, because both Rogers and the Utsumi patents address the general problem of polarization when using polymers, the motivation to combine them is even further supported by substantial evidence concerning known problems.

**4. Wheatley's Untimely Argument Concerning A Reasonable Expectation Of Success Is Not Properly Before This Court And Should Not Be Considered**

Wheatley argues that the Board was required to also find that the references showed a reasonable expectation of success. Br. at 25-28. However, Wheatley did not make this argument to the Board. See A152-55.

Thus, it is not surprising that the Board did not make findings on a reasonable expectation of success, since Wheatley never challenged it. As such, Wheatley waived the argument and since his principal brief to this Court raises it for the first time on appeal, it should not be considered at this late date. See, e.g., In re Watts, 354 F.3d 1362, 1367-68 (Fed. Cir. 2004) (argument must be made to the Board before raising it in Court); In re Hyatt, 211 F.3d 1367, 1373 (Fed. Cir. 2000) (same). Consistent with not arguing below, we also note that Wheatley (i.e., 3M) presented no other type of countering-evidence, e.g., test results using the closest prior art or expert declaration,<sup>3</sup> to support the application.

As discussed above, the evidence made of record repeatedly shows that PEN is a better polarizer than PET. Wheatley's argument that this is true only sometimes is not supported by logic or any evidence actually in the record.

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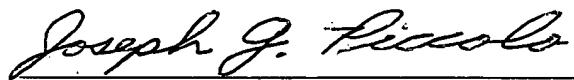
<sup>3</sup> Cf. In re Geisler, 116 F.3d 1465, 1469-71 (Fed. Cir. 1997) (discussing the value of evidence for supporting a position urged by a patent applicant).

## **CONCLUSION**

Since the Board's decision that Wheatley's invention would have been obvious in view of Rogers and either Utsumi patent is supported by substantial evidence, and Wheatley has shown no reversible error, this Court should affirm the decision of the Board.

Respectfully submitted,

September 5, 2006



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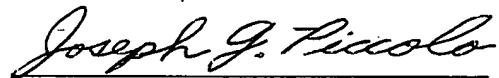
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## **CERTIFICATE OF SERVICE**

I hereby certify that on September 5, 2006, I caused two copies of the foregoing BRIEF FOR APPELLEE DIRECTOR OF UNITED STATES PATENT AND TRADEMARK OFFICE to be served by U.S. Express Mail to Appellant's counsel of record, namely:

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